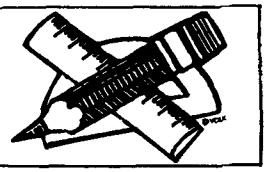
SD&C Abstracts



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• Detergents

DEVELOPMENT OF A WASHING POWDER FOR DECONTAMINATING TEXTILE FABRICS. S. Kunze and K. Henning. *Tenside Deterg.* 14(6), 301–6 (1977). To remove radioactive dirt from industrial protective clothing one requires detergents which not only must show an efficient decontaminant effect but must also present no problems in the treatment of the radioactive waste. For this reason comparative tests were carried out to ascertain the decontamination capacity, thermal stability and foaming values of various commercially available detergents hitherto used for decontamination. Since none of the products tested gave satisfactory results for all three requirements, such a product was developed at the Karlsuhe Nuclear Research Establishment. With this product, all textile products, including woolens from reactor, nuclear fuel production and reconstituting plants as well as from research laboratories were successfully decontaminated in one washing cycle at 60 C, and perfectly cleaned. By successfully using only one washing stage it was possible to reduce the amount of radioactive effluent by 25%.

THE FISH COMPARIBILITY OF RESIDUAL TENSIDES AND INTERMEDIATE PRODUCTS FROM THE MICROBIAL DEGRADATION OF A LINEAR ALKYL BENZENESULFONATE. P. Schobert and E. Kunkel (Chem. Werke Huls AG, Marl). *Tenside Deterg.* 14(6), 293–6 (1977). Tests conducted on the fish compatibility (orfes) of metabolites which lend themselves to analysis, and which were divided into two fractions, in the biological degradation of a linear alkyl benzenesulfonate produced the following results with the OECD confirmatory test. After transit through the activated sludge plant, the individual tensides that were still intact were quite compatible with fish at a concentration of 20 mg per liter. The non-tensidic metabolites (mainly aromatic sulfocarbonic acids) themselves do not exhibit properties which are toxic to fish at all at a concentration of 200 mg per liter. Even the combined addition of 20 mg per liter of residual tensides and 200 mg per liter of non-tensidic metabolites had no negative effects on the aquarium water.

THE CONCENTRATION EFFECT OF SURFACTANTS ON ZETA-POTENTIAL IN NON-AQUEOUS DISPERSIONS. A. Kitahara, M. Amano, S. Kawasaki and K. Kon-no (Science Univ. Tokyo). *Colloid Polym. Sci.* 255(11), 1118–21 (1977). The concentration effect of surfactants on zeta-potential in nonaqueous suspensions was classified into two main types. Type A in which the maximum appears is more important. The result obtained for carbon black dispersed. in the cyclohexane solutions of Aerosol OT or dodecylammonium butyrate showed the type A. An equilibrium theory elucidating the concentration effect was proposed and the equilibrium constants and the surface site concentrations were estimated for one of the above systems, using the relation between ion and surfactant concentrations obtained previously.

A RAMAN SPECTROSCOPY STUDY OF MICELLAR STRUCTURES IN TERNARY SYSTEMS OF WATER-SODIUM OCTANOATE-PENTANOL/DECANOL. J.B. Rosenholm, K. Larsson and N. Diny-Nguyen. *Colloid Polym. Sci.* 255(11), 1098–1109 (1977). Raman spectroscopy has been used to study the micellar structure of the systems water-sodium octanoate-decanol. The C-H and C-C stretching vibration regions were utilized in the study of both the hydrocarbon chain conformation and the degree of polar/apolar contact.

ORIENTATION OF NONIONIC SURFACTANTS ON SOLID SURFACES: N-ALKYL POLYGLYCOL ETHERS ON MONTMORILLONITE. D. Platikanov, A. Weiss and G. Lagaly (Inst. Inorganic Chem., Univ. Munchen and Kiel). *Colloid Polym. Sci.* 255, 907–15 (1977). Complexes of nonionic surfactants $R\text{-}(OCH_2CH_2)_xOH$ with montmorillonite have been studied. On internal surfaces the surfactant molecules are arranged in bilayers. Other data are given regarding film structure and orientation at the solid surface.

EFFECT OF SOME ANIONIC SURFACTANTS ON THE STABILITY OF OXYTETRACYCLINE HYDROCHLORIDE STABILIZED EMULSION. M.K. Sharma and S.N. Srivastava (Chem. Labs., Agra College, Agra, India). *Colloid Polym. Sci.* 255(9), 887–95 (1977). The zeta potential of oxytetracycline hydrochloride stabilized emulsion flocculated by the addition of anionic surfactants was calculated. The interaction energies of these emulsions were also evaluated and the stability discussed in the light of D.L.V.O. theory. The energy carriers, thus obtained, were very high, which prevented the occurrence of flocculation in primary minima.

THE INFLUENCE OF SELECTED METAL CHLORIDES ON THE DISPERSION STATE OF SUSPENSIONS OF PRUSSIAN BLUE STABILIZED WITH SURFACE-ACTIVE SUBSTANCES. L. Chromy and E. Wielgos (Univ. Slaski, Inst. Chem. Kattowitz, Poland). *Farbe Lack* 83(12), 1079–83 (1977). The effect of seven selected metal chlorides in combination with three surfactants as counteraction against secondary agglomerates of pre-dispersed prussian blue. The effect of the metal chlorides proved favorable and was clearly dependent on concentration.

FLOCCULATION OF DISPERSED SYSTEMS STABILIZED BY NONIONIC SURFACTANT. S. Saito and M. Fujiwara (Momotani Juntenkan, Ltd., Minatoku, Osaka, Japan). *Colloid Polym. Sci.* 255(11), 1122–24 (1977). Aqueous suspensions and emulsions stabilized solely by nonionic surfactant of the polyoxyethylene type are flocculated by adding polymeric acid (e.g. polyacrylic acid) and electrolyte (acid and neutral salts of polyvalent cations). This destabilization effect of polymeric acids is ascribed to the interaction between the polyacid and nonionic surfactant on the colloid particles. Examples are shown.